

ABSTRACT OF THE DISCLOSURE

A flat limiting-current sensor 10 includes a solid electrolyte substrate 22, a negative electrode 34a and a positive electrode 32a. The negative and positive electrodes 34a and 32a, respectively, are disposed on the same side of the solid electrolyte substrate 22. A voltage of 0.8 V is applied between the negative electrode 34a and the positive electrode 32a in order to determine oxygen concentration. The ratio between the area of the negative electrode 34a and the area of the positive electrode 32a is set to 1:2, thereby reducing element resistance to 74% that of the case where the negative electrode and the positive electrode assume the same area. Thus, the measurement accuracy of the flat limiting-current sensor 10 is improved.